

The Keynote

Newsletter of FISTS CW Club • The International Morse Preservation Society
Issue 1, 2010

IN THIS ISSUE:

SPRINT
RESULTS
AND
SOAPBOX

"FIELD
MOUSE"
– MAKE
YOUR
OWN!

NEWS,
OPINIONS
AND
ARTICLES
FROM
MEMBERS



"When You've Worked a FISTS, You've Worked a Friend"

When you have a question about FISTS, go to the source for the correct answer. Posting a question on a chat room or email reflector may result in a lot of opinions, but your best bet is to ask a FISTS volunteer or look in the reference issue.

Please put the word 'FISTS' somewhere in the title of your email. This will help the volunteer recognize that your email is important and not spam.

For questions about:

Awards and Certificates contact

Dennis Franklin, K6DF, fistsawards@fists.org : 4658 CAPITAN DR, Fremont CA 94536

The QSL Bureau contact

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Our club call KN0WCW contact

Karl Zuege, KB1DSB, hmc.ret.karl@myfairpoint.net : 2176 DRAKE RD, Bomoseen VT 05732

The membership roster, call changes, name changes contact

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To get an application or sample Keynote sent to a friend contact

Jim Ranieri, AA9LS, aa9ls@turbotoads.com : 33778 REBECCA RD, Kingston IL 60145

Web page changes, getting your personal or club webpage linked, etc contact

Webmaster Bill Myers, KK4KF, kk4kf@cox.net

Club presentation packets contact

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Code Buddy volunteers and buddies contact

**Nick Yokanovich, K3NY, & The Historical Electronics Museum Amateur Radio Club,
k3ny@cablespeed.com : 108 BRENT RD. Arnold MD 21012**

Sprints contact

Gil Woodside, 30 Hilltop Ave, West Warwick RI 02893-2825; wa1lad@cox.net

Get Your Feet Wet Weekend /G3ZQS Memorial Straight Key Contest contact

Lee Hallin, N7NU, hallinl@lanecc.edu : 3413 WALTON LN, Eugene OR 97408

Ordering supplies: Irene Kott W08E

**44609 North Bunker Hill Dr, Clinton Twp MI 48038 or paypal to fists@tir.com.
Irene has no email capability. Some shirt sizes are sold out - check web page.**

All other questions, including supplies, tapes for the blind, callsign/email/ postal address changes, (NO we do not get this info directly from the FCC!) general membership questions and articles for the Keynote contact Nancy Kott WZ8C, nancy@tir.com; PO Box 47, Hadley MI 48440, phone 810-797-2033, fax 810-797-5808. Please check your label for your renewal month/year - dues are \$15/year. Payable to FISTS CW Club or paypal to fists@tir.com.

FISTS CW CLUB

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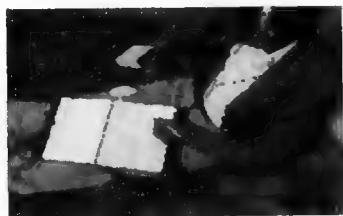
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WHEN YOU'VE WORKED A FISTS, YOU'VE WORKED A FRIEND

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Our Goals:

- ✕ Further the use of CW
- ✕ Encourage newcomers to use Morse code
- ✕ Engender friendships among members

Nancy's Note

Hello FISTS! I want to apologize for the lack of Keynotes last year. As some of you know, I was in and out of the hospital last year. Although I was able to keep up with the correspondence and memberships, The Keynote lapsed. On top of it, my computer crashed and I lost a lot of Keynote work I had already done, so that was rather disheartening. I've lost a lot of articles - and in this issue you'll find some that are a year or so old. They deserve to be shared - the info is still good. If you sent something and I haven't printed it, please send it again.

I'm much better now and hope to make it up to you by getting out some fancy newsletters. What do you think of this one? Do you like a Table of Contents? Is the color cover a good idea? Send in a VERTICAL shot of yourself holding your favorite key and we'll try to get you on the cover. It has to be a vertical oriented photograph in high resolution jpg format. I thought I'd start the ball rolling by using a photo of me holding a little kit key I built.

I want to make The Keynote the best it can be, making your FISTS membership even more of a bargain.

We have a new operating achievement award for 2010, the FISTS Military Appreciation Award. It will be a lot of fun as well as get some interesting QSOs going.

As always, I love to hear from you so email to nancy@tir.com or write POBox 47, Hadley MI 48440.

Welcome to the New FISTS Members

FISTS #	CALL	NAME	QTH	SPONSOR	FISTS #	CALL	NAME	QTH	SPONSOR
14609	K9ALP	Lou	OH		14657	WA5IEX	Roland	TX	
14610	WB3KAS	Jim	MD		14658	KB5SKQ	Loys	TX	
14611	N0TNG	Phil	MO		14659	NQ5T	Grant	TX	
14612	KD6HTN	Kate	CA		14660	WG3D	Lou	DE	N2RSD
14613	VA7JPP	John	BC		14661	KJ4GOI	Reed	VA	
14614	K7DJO	John	UT		14662	WA3MKC	Bruce	MD	
14615	KA4IUO	John	SC		14663	KC2SOU	Ronald	NJ	
14616	W0JMW	Jeff	KS		14664	AF6PU	Jim	CA	
14617	KC7KZ	Rod	ID		14665	KB7H	Kenneth	IL	
14618	W2RBA	Joe	NY		14666	KC5CDY	Rose	IL	
14619	KK2Z	Kirk	TX		14667	KE5NYZ	Sameul	TX	
14620	W9EWZ	Bob	IL		14668	K6TT	Phil	CA	
14621	W3BI	Rick	PA		14669	W4UHE	Bill	FL	
14622	KJ4FXS	John	FL		14670	W7JZE	Bill	CA	
14623	WA6PZB	Dan	CA		14671	KB2SMZ	Donald	NY	
14624	KD8FVG	Brian	MI		14672	KJ4IQT	Niles	SC	
14625	AE7CC	Chadd	WA		14673	KC0DD	Jim	IA	K3WWP
14626	WA1SLD	Gerry	MA		14674	SWL	David	MN	
14627	K5ZRK	Larry	MS		14675	SWL	Ethan	MN	
14628	WY7RM	Roland	WY		14676	SWL	Elisabeth		MN
14629	NS8N	Brandon	OH		14677	K5PJM	Paul	MS	
14630	N6VNO	Clay	CA		14678	WD5IYT	Jim	TX	
14631	N3RC	Roger	CA		14679	AJ4EY	Dodson	VA	
14632	K4TMN	Tom	FL		14680	N2NB	James	NY	N2WDV
14633	VE3JLC	Jim	ON		14681	AA7LG	Bob	WA	
14634	KE5OHV	Doug	NM		14682	K7RYO	Tap	WA	
14635	KC7WYO	Randy	UT		14683	K9BDR	Gary	IL	
14636	WB5TKI	Doug	TX		14684	N0SSS	Adam	TX	W6DDB & KA8HFN
14637	W7CCA	Carl	AZ						
14638	K0UJW	Bob	CO		14685	AA4AE	Frank	TN	
14639	AE4NY	Russ	GA		14686	W0FEK	John	AZ	
14640	N4BYF	Josie	NM		14687	W8VVE	Sam	WV	
14641	KA6QWY	Fred	IN	K0RDS	14688	W2BY	Mike	NJ	
14642	WB4JWF	Jim	NC		14689	KA3RNW	Mark	MD	
14643	W1JMZ	Jud	RI		14690	WT6O	Jerry	UT	
14644	WA6RSV	Pablo	CA		14691	WD5FOI	John	TX	K5BZH
14645	W2WB	Jon	NY		14692	WB9MDS	Jim	IN	
14646	KN6OP	David	CA		14693	KE5SCG	Scott	TX	
14647	WB4QNI	Steve	SC		14694	NE6RD	Michael	CA	
14648	N5KEX	Watt	TX		14695	K3FSV	Lawrence	TX	
14649	KA8WWK	Paul	OH		14696	N6OSB	Gabriel	CA	
14651	K8FQ	Jose	MI		14697	KC9HBA	Bob	WI	
14652	K8EXB	Doug	MI		14698	WZ3B	Joe	GA	
14653	W2AAB	Fred	NJ		14699	WA8GRI	Jim	MI	
14654	K1PUB	Chas	MA		14701	KB3TDF	Ilan	MD	
14655	KA0CSW	Jim	MN		14702	K3RYA	William	PA	
14656	KB7ZCJ	David	UT		14703	N6MUK	Paul	CA	

Silent Keys

Dick, NS2H, #2508 - September 18, 2009
Wendy, KB1AF, #9292 - September 1, 2009
James, K1EXE, #4011
Fred, K1SZK, # 1020
Fred, W4FD, #9173; brother of Kathy, 7503, K4SAF
Ken, W6FU, # 2193, my avocado buddy from Visalia.
Allan, W6GBG - # 13185
Al, W8PBX, # 4528
Tom, AA9BJ, # 2601
Vince, K8LQM, # 2042
Paul Berroyer, W9HLX, 7395
9235, Jim Williamson, NQ4T
2361, Randy Hargenrader, K4QO
2167, Ken Law, VE6KJL

W9FFU, Glenn Rosenberger: I made many QSO's with Glenn... This news makes me very sad... Glenn would have been 95 this Dec 26. I always looked forward to chatting with Glenn during the holidays as he ALWAYS called me on the air to say Happy Thanksgiving or Merry Christmas, and again on New Years to say HNY to me and my family. His CW speed was usually around 16-18 WPM and he always sent good clean code. It was a pleasure to have known him.... He will be missed.... Dennis, K6DF

Tim Soxman, W3ZVT passed away on September 19th, 2009. An avid CW operator and telegraph key collector, he also repaired old keys - better than new. He had made beautiful reproductions of some rare keys like the Vibroplex Midget, and Wire Chief's Special (Vertical Vibroplex) as well made parts for Vibroplex of Alabama, and produced the Vari-Speed and other devices for Vibroplex. He also made the SOX key and other items for Morse Express.

He died as he wanted at home, surrounded by his wife and family and his beloved dogs. He was a rich man, he had time to tell his family that he loved them and he knew they loved him. Rest in peace, our friend, may God's blessings give you great DX, beautiful fists everywhere to work and no QRM. Submitted by David N1EA

It is with deep sadness that I inform FISTS of the passing of my dear friend **Doug C Cardin KG4NNN**, #8684 of Tellico Plains TN on Saturday 9-5-09 at 0630. Respectfully submitted John WB4MED

Mike Greenfield, N9JIY, 1282, became a Silent Key in January from kidney cancer. Mike was active with the FISTS petition to keep the code requirement and had a good sense of humor. At a hamfest, he and a friend had a quantity of little containers of wax lube for clarinets on a swapfest table with a sign that had the attached copy on it. Lots of curiosity & questions. Almost some believers.

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- * SLASH THROUGH QRN
- * SMASH THROUGH QRM

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WWII CW Operation in the Pacific

by Ton Isch N2TS

I am writing as an Old Timer, having been a ham for 58 years. Radio duty in WWII takes me back to my beginnings with CW in 1943. The article deals with CW and my crew in WWII. Every word is true. I have had many more experiences with CW in by-gone years.

My name is Tom Isch and I was a Combat Crew Radio Operator (MOS 2756) in WWII in the Pacific Ocean Area. I was a Staff Sergeant in the 311th Troop Carrier Squadron.

We had just received 16 brand new C-47 Aircraft/ The C-47 had a 95 foot wingspan and was 65 feet long. It was powered by twin Wasp 14 cylinder radial engines, each of which developed 2400 horsepower.

The Jan of 1945, the 311th Troop Carrier Squadron was stationed at Mather Field in Sacramento CA, awaiting deployment to the Pacific Area. It had been decided that instead of being transported overseas by ship, we were to fly our aircraft to Hickam Field in Hawaii. Fine and Dandy!

The only problem being that Hawaii was 2300 miles southwest of Mather Field, and the range of C-47s are only 1600 miles! The scary 700 mile shortfall was a bit disconcerting. The Air Corps rigged the planes with extra barrels of fuel inside the plane which could be transferred to the 400 gallon wing tanks when needed. In real time however, this is what happened to our crew.

The meteorologists had been studying and fretting over the weather between CA and HI for weeks. The problem was a persistent westerly wind which to us meant "headwinds" making our forward progress less than normal. If continued, the plane would never reach the destination. In those days there was no GPS. We relied on a navigator who at night could tell us exactly where we were located,

but in daylight, there was only one stay, the sun, so one of the needed dimensions of a position was missing!

We departed Mather Field early on a January morning and headed for Honolulu. In wartime, radio operators were ordered to observe Radio Silence, except in a dire emergency.

My job, therefore, was to listen to the AACCS station in San Francisco, which would control our flight. The main concern was in having enough fuel to reach HI.

As we were approaching the "point of no return," I received an urgent CW message from San Francisco, telling me that the weather pattern had changed and we would have strong headwinds and would not be able to reach HI.

The message ordered us to return to Mather Field at once! Remember that these messages were all encoded, making it necessary for me to decode the message before giving it to our pilot, Captain Jim Gatlin.

To my astonishment, Captain Gatlin did not believe the order to return to CA. He instructed me to get a confirmation of the order. I encoded his message and got out my trusty J-38 key and sent it on the way. The reply from San Francisco was a bit on the nasty side, so we made a quick 180 and headed back to Mather Field. The Captain got into a bit of trouble, but my copy of the encoded CW was 100% correct. He kept me on his crew because without my ability to copy CW, neither of us would be here today!

* Explanation of terms: (MOS2756) means Military Occupational Specialty. Flight Radio Operator MOS 756) Ground Radio Op = Ground Radio Operator Mechanic.

On August 4, 2009, my streak of making at least one QRP CW QSO per day reached the 15 year mark or 5,479 consecutive days. At that time I presented an interview about the streak in my web site diary.

(<http://home.windstream.net/johnshan/>).

For those who missed it, here is a condensed version of it, to be continued in the next couple issues of The Keynote.

The interviewers were hams who submitted questions about the streak. The first few questions were from local ham Tom WY3H, former newspaper reporter, good friend, and president of the NAQCC.

WY3H: How did you get started in ham radio and when?

K3WWP: It was back in the early 1960s when I tuned away from our local Pittsburgh station KDKA on the AM BC band and heard WHO in Des Moines, IA. I thought it was wonderful you could hear a radio station from so far away. I tuned around some more and heard other distant AM stations.

I wondered if I could get even more distant stations if I hooked up some kind of long wire antenna to the radio. I did so, connecting it to the tuning capacitor where I saw the internal loop antenna was connected. Not knowing much about radio at that time, perhaps I connected it to the oscillator section of the capacitor. Anyway, somehow that changed to tuning range of the radio and I heard Radio Switzerland as my first ever short wave station.

After hearing other SW BC stations, then I heard this station with someone talking as if he was on the phone who identified himself as W3CYG. I later found out he was a local amateur radio operator named Red Claypoole.

I didn't think much about it at the time, but some time later a friend of mine, Larry Hooks, was showing off his CB radio to me, and mentioned he was going to get his amateur radio license. That sounded intriguing to me, so I decided to try to get

my license also. Of course then you had to learn Morse code to get all classes of license except Technician. So he and I studied the code together, and I was immediately fascinated by it.

When we were ready, Larry and I went to the aforementioned W3CYG to take our Novice exam. I remember that session as clearly as if it happened yesterday although it actually was 47 years ago now. Red was fooling around with the key sending a few letters just to let us get familiar with his sending and the sound of his code practice oscillator and to relax a bit. Suddenly I caught him sending R U READY?

Larry didn't catch it, but I did and said I was ready. Red sent us the 5 WPM code test which we both passed, then gave us the written part of the test which we also both passed. The info was then sent off to the FCC, and in a couple weeks on April 3, 1963, Larry was KN3WWW and I was KN3WWP.

WY3H: Your current streak started 15 years ago, but just how?

K3WWP: My friend Eric, KB3BFQ, who used to live next door are sports fans and sports deals a lot with various kinds of streaks such as Lou Gehrig's 2130 consecutive games played streak subsequently broken by Cal Ripken who played 2632 games in a row before he missed a game.

Eric and I wondered how streaks could be applied to ham radio and thought of the idea of seeing how many days in a row it would be possible to make a contact with my simple equipment. I still haven't found a definite answer other than to say it is at least 5,479 days and counting.

WY3H: What are some of the memorable events in the streak? Your most memorable QSOs, for example.

K3WWP: That question could lead to writing a book, since there were many.

One of my most memorable QSOs came just a few days ago when I worked Mirek, VK6DXI, near Perth, Australia which is just about as far away from Kittanning PA as you can get and still remain on

Earth. I've worked Australia many times in the streak, but this QSO was on 40 meters and it came when the sun hadn't yet set here. Both Mirek and I are just about certain it was a long path grey path QSO which would mean my QRP signals travelled over 14,000 miles from here to there. Australia also figures in other memorable streak QSOs.

I worked VH6HQ on 30M a couple times. The first time he answered my CQ, I figured it was a Canadian station when I heard the initial V, then after I got VK I thought he must be portable somewhere in North or South America. However he was near Perth, Australia.

One of the times we worked, shortly after the QSO ended, my phone rang and when I answered, it was VK6HQ calling (VERY) long distance. He wanted to know a bit more about my setup and we chatted for a few minutes. Another event was working Hawaii on 80 meters not once, but twice, and almost three times in this year's ARRL DX contest.

What a thrill to hear KH6MB and a few minutes later KH6LC come back to my call. The QSOs were not all that difficult either. They did involve a few repeats of my info, but both were completed successfully. A further attempt with a third station didn't get beyond K3W??. A mini-streak within the streak is memorable.

From November 23, 1999 through February 11, 2000, I made at least one DX QSO each day. Then, after missing a day, I started again on February 13 and continued through July 15th. The second streak was 154 days long which made 235 out of 236 days I worked some DX.

More about the overall streak and the mini DX streak can be found on my web site. I must also mention my first Japanese QSO with JA3ZOH. It took a long time to get that first Japan QSO, but now I have around 180 or so. The first QSO with Asiatic Russia was also memorable, as were several DXpedition QSOs where I had to break big pileups to get the QSO.

Thanks Tom, for the opportunity to answer those wonderful, pertinent questions. In the next part of this interview, I'll field the questions I alluded to earlier that came from diary readers.

The Military Appreciation Award

The North American FISTS CW Club has a new operating achievement award, the USA FISTS Military Appreciation Award. To earn the award, make 2-way CW QSOs with 100 FISTS members who are U.S. military veterans or currently serving in the U.S. military.

Logs must include the following QSO information for the station worked: Call, Name, Date, Band, FISTS Number, and Branch of Military Service.

Each FISTS number may be worked only once for one point. *It is the FISTS NUMBER that counts, not the callsign.* If a person changes their call, you cannot work them again for credit, because they will still have the same FISTS number.

The award may be earned by anyone. The award is free, including postage, to current FISTS members who submit qualified logs. Those who are not FISTS members or are not FISTS members in good standing must include \$3 cash, check payable to FISTS, or paypal to fists@tir.com to defray the expense of the certificate and postage.

This is an open-ended award with no closing date. Contacts must be made on or after January 15, 2010 on any legal CW band. Since the military record of FISTS members is not in the database, it is hoped that this award will encourage rag-chewing. If contacts are made on the WARC bands, please do it during a QSO and not in a "number chasing" manner.

To submit your log via email, send an e-mail to Awards Manager, K6DF, at fistsawards@fists.org with your call sign, name and address, FISTS membership number, and the name of the award you are applying for. Attach your log of all contacts for the award to the e-mail. The ONLY files that can be accepted are; Excel, Word, and Text files. DO NOT send logs that are scanned images (jpg) of your log pasted into Excel and Word documents.

If you are mailing your award application to K6DF via his callbook address, do not send your original log; send a copy.

2009 Winter Sprint Results

QRO Scores

Call	Name	FISTS #	State	Mem	Non-Mem	Mult	Score
N5DY	Jack	11105	OK	103	4	37	19351
K4QS	Charles	12817	VA	87	2	37	16243
WB2MIC	Jozef	12313	VT	93	4	33	15609
K5YQF	Cecil	8077	TX	82	3	37	15392
W9LHG	John	9565	MN	83	2	33	13827
WB0B	Larry	2916	IA	78	8	33	13398
K8IJ	Charlie	8096	KY	82	0	32	13120
K4IA	Buck	6702	VA	83	2	30	12570
K4BA I	John	2158	GA	64	4	30	9840
VE1ZAC	Jeff	2048	NS	62	3	29	9164
K8CI	Richard	5270	OH	65	1	25	8175
KI0J	Albert	11905	CO	58	1	26	7592
W7GVE	Ed	12077	AZ	55	3	26	7306
K7ZYV	Carl	3426	MS	53	5	26	7150
W5KL	Leland	3929	VA	53	2	26	6994
W4IHI	Gary	13344	FL	55	1	25	6925
W4NBS	Tom	6121	AL	56	3	23	6578
N6NAX	Don	8884	AZ	48	2	26	6344
AF5Z	Robert	2035	TX	51	1	24	6168
W9ILF	Ivan	11745	IN	51	1	24	6168
N3RSD	Frank	2411	FL	45	1	25	5675
K2FW	Steven	11990	NJ	55	4	20	5660
NA5Q	Roland	8622	LA	46	1	24	5568
W0JFR	John	11827	CO	43	0	24	5160
N2LQ	Ken	10547	NY	42	0	24	5040
KC0VKN	Joe	12091	IA	41	0	22	4510
KS0M	Dick	3067	MO	41	0	22	4510
KK0I	Jack	12743	WI	40	1	21	4242
AE0G	Larry	12874	NE	34	0	24	4080
W7SOM	John	9358	WA	36	2	22	4048
K9MMS	Gary	13683	IL	32	0	23	3680
NE8J	Howard	13142	FL	34	0	19	3230
WB2FXK	Jack	918	NY	34	0	19	3230
K9NSS	Gary	2534	IL	31	0	20	3100
W4KRN	Karen	2407	VA	28	0	20	2800
K8VFR	Rosemarie	5602	MI	35	0	16	2800

Gil Woodside, Sprint Manager, wallad@cox.net

Winter Sprint Results - QRP

Call	Name	FISTS #	State	Mem	Non-Mem	Mult	Score
KB3CVO	TOM	8110	PA	27	3	13	1833
N5KIP	RICHARD	8653	LA	19	1	17	1649
WN9E	ERIC	13184	IL	16	0	14	1120
W0UFO	MERT	3823	MN	14	0	12	840
WA5RML	ANDREW	9449	TX	10	0	8	400
W0OOW	STEVE	7808	NE	6	0	5	150
W3ZMN	CONRAD	8634	PA	6	0	5	150

Winter Sprint Club Call Results

Call	Club	FISTS #	State	Mem	Non-Mem	Mult	Score
W4FFF	Fists Club of NC	9700	NC	96	8	42	20832
WB0RMK	SMARTS Radio Club	10550	MN	93	10	38	18430
W7MRC	Maltby Radio Club	11925	WA	65	6	29	9773

Winter Sprint 2009 Soapbox

WA5RML-Andrew #9449: 5 watts to G5RV ant; Used mostly Vibroplex straight key - sometimes the Bug; Didn't have much time to participate and QRP didn't help the QSO count. Still - good to hear the other FISTS operators! CU next sprint!

W0UFO-Mert #3823: Conditions seemed OK and had fun but was not able to work the full time. 73 to all.

WN9E-Eric #13184: Really enjoyed participating in Winter Sprint. Amazing what you can do CW with 5 Watts.

K5ICW-Hank #8180: Only able to do 2 hours of Sprint (Valentine's Day). Signals were decent. Nice to hear FISTS activity ! 73

K5MMH-Michael #14322: My first FISTS contest - had a great time. Tnx to all who participated. Looking forward to many more. 73

K8CI-Dick #5270: Nice sprint...40 meter band was up and down

KB9YGD-No man: Tnx everyone fer a wonderful time agn this yr es 73

WB0PYF-Ray #7986: Only had limited air time. Thanks.

Fall 2009 Sprint Results - QRO

Call	Name	FISTS #	State	Mem	Non-Mem	Mult	Score
K4BA I	JOHN	2158	GA	96	4	42	20496
K7TQ	RANDY	3251	ID	73	10	39	15015
K3MQ	BOB	11194	DE	59	6	34	10438
W4YE	BUDDY	3929	VA	56	0	28	7840
N5DY	JACK	11105	OK	51	1	25	6425
W7GB	DON	2108	WA	40	1	27	5454
W9LHG	JOHN	9565	MN	38	0	26	4940
N3RSD	FRANK	2411	DE	40	3	21	4326
KS0M	DICK	3067	MO	36	0	23	4140
K4UK	STAN	2034	VA	33	0	20	3300
WB4JJJ	AL	2433	VA	31	2	19	3021
K8VFR	ROSE	5602	MI	28	2	18	2592
N2BZD	PAT	7620	NJ	23	0	15	1725
KI0J	AL	11905	CO	23	0	13	1495
WA1LAD	GIL	3492	RI	21	0	12	1260
AE0G	LARRY	12874	NE	18	0	13	1170
W5QLF	JOE	10553	TX	14	0	12	840
WA0VQY	ROBIN	3346	IA	14	0	12	840
NV9X	JIM	7517	IL	13	0	11	715
WA9ZES	WALT	14605	IN	11	0	8	440
W0CZ	KEN	7218	ND	9	0	8	360
K9XL	RAY	8469	IL	7	0	7	245
W7GSV	ROBERT	9159	ID	6	0	6	180

Fall 2009 Sprint Results - QRP

Call	Name	FISTS #	State	Mem	Non-Mem	Mult	Score
W7GVE	ED	12077	AZ	49	2	25	6225
W7JI	LOU	11079	KS	34	3	22	3872
N5XE	CARL	2520	OK	27	0	22	2970
W0UFO	MERT	3823	MN	30	1	19	2888
K3HX	TIM	5976	PA	24	1	20	2440
K5YQF	CECIL	8077	TX	21	1	17	1819
KB3CVO	TOM	8110	PA	21	0	13	1365
VA3RKM	ROBERT	11797	ONT	19	0	13	1235
N0TA	JOHN	11827	CO	17	1	13	1131
VE2AWR	SERGE	10370	QC	16	0	11	880
K9JWV	JIM	13418	UT	15	0	11	825
WA5RML	ANDREW	9449	TX	9	0	7	315

Fall 2009 Club Call Results

Call	Club	FISTS #	State	Mem	Non-Mem	Mult	Score
W4FFF	FISTS CLUB OF N.C.	9700	NC	85	3	35	15085
W2FAM	FISTS Along the Mohawk	12650	NY	48	7	27	6858
W5KL	QCWA CH. 202	12350	VA	25	1	15	1905
NU5DE	NATURIST ARC	8050	TX	14	0	12	840

Fall Soapbox

Frank,N3RSD #2411: Great fun. Enjoyed meeting new FISTS members, older ones too!

Dick,KS0M #3067: With other contests going on, it was difficult to make many contacts. S&P does not work very well in FISTS contests; called CQ most of the time. Often when I was working a call I had 1 or 2 others calling me causing QRM. Not a way for a FISTS to operate. See you all in the next Sprint.

Alan,WB4JJJ #2433: Prop wasn't the best, even on 40. 20 had QRM also.

Rosemarie,K8VFR #5602: Always great to work our club contest. Lots of fun!

Albert,KI0J #11905: Where was everyone?

Gil,WA1LAD #3492: Lot of AZ and PA QSO party stations and propagation wasn't that great. Fun as always though.

Jim, #7517: Seems participation was low. Had more Pennsylvania QSO Party contacts than FISTS.

Ken, #7218: Band was in bad condition but contest was fun.

Ed,W7GVE #12077: I haven't missed a Sprint yet. This was my 16th. Always great fun, even with a poor band! I broke away from the AZ QP for this one! I used my new K8RA P-2 paddle!

Louis,W7JI #11079: Band conditions were very poor.

Mert,W0UFO #3823: A cold operation from my cabin in the woods. Fun to work FISTS friends!

Tim,K3HX #5976: I was surprised by the amount of activity. Good to hear old friends!

Cecil,K5YQF #8077: Band seemed quiet here. Not many signals but many were very strong. I got a late start and went with QRP but still worked 17 states. Thanks to Annie, Steve, Jim, Russ and Ed for five new states in the last half hour.

Tom,KB3CVO #8110: Could only work the first 3 hours but had a great time.

Robert,VA3RKM #11797: K2, 5w, verticals. Missed the Sprints due to work. Great to be back at it.

Jim,K9JWV #13418: Bands were absolutly lousy here in SW Utah. Was operating QRP and had all of 12 QSO's for the first 2 hours. Took a break and worked the last 20 minutes for 3 more. Wow! Sheesh, sure hope some sunspots start kicking in!!

Andrew,WA5MRL #9449: Worked last 1.5 hours of the event; thanks to all who copied my QRP signal!

The Field Mouse: a Key and Keyer for Field Applications

By Don Smith, N6NAX

This article describes the design and construction of a versatile key-and-keyer module that is well suited to mobile and field applications. Although I tell how I built this project, exact duplication by others is not expected. Circuit-wise, no new ground is broken here. A standard TiCK(footnote 1) keyer circuit is simply packaged inside a computer mouse body and called a Field Mouse.

Getting Started

To build a Field Mouse similar to mine, the first requirement is to get your hands on a 2-button mouse, without scrolling wheel, that suits your hand. New mice are often on sale for reasonable prices at consumer electronics stores such as RadioShack and Fry's Electronics. A better deal is to get a used one at a thrift store or maybe from a friend who has upgraded to a newer model. Just make sure the mouse is not the wireless variety and that the switches operate properly. Little more than a handful of components is needed for this project and they, including the TiCK programmed integrated circuit chip, are easily purchased.(footnote 2) I built my keyer using a second generation TiCK-2B chip, but the original TiCK-1 and the later TiCK-4 versions are all interchangeable; the newer releases merely incorporate a few additional features.



Construction

Open up the mouse you have chosen and become familiar with its construction. Now, using a solder sucker or copper desoldering braid, remove all the components except the two switches from the circuit board and discard all components of the track-ball mechanism. Refer to Figure 1. You will see there are four stanchions supporting the track-ball encoder wheels and a support structure holding the track-ball pressure roller. These structures must be cut down approximately flush with the inside surface of the mouse-half to provide the maximum free space for keyer components.

At this point a decision must be made because there are several ways to proceed with the implementation of the TiCK circuitry. If when you purchase the TiCK integrated circuit chip you also purchase a TiCK printed-circuit board (PC board), you have the option of building the circuit on that board and piggybacking it on the original mouse circuit board. Alternatively you can modify the circuit pattern on the mouse's original PC board by cutting traces and adding jumper wires as required to get the necessary circuitry. A third approach, the one I used, is to use the mouse's original board outline as a pattern to make a new PC board. The TiCK circuit pattern must then be etched on the new board.

If you opt to fabricate a new board, then the two switches must also be removed from the original mouse board for use on the new board. The locations of the mounting holes for those switches must be accurately transferred to your new PC board. Be aware, if you are going to make a new board, its outline must accurately match the outline of the original mouse board so that it mounts the same

way with the switches winding up in the same location as on the original board. (footnote 3)

I chose an external 12-volt power source supplied by my QRP field rig. Therefore, I used an on-board regulator, U2, and the required filter capacitors, C1 and C2, shown in Figure 2, (at the end of this article) to provide the operating voltage for the keyer. If you don't want to use an external 12-volt power source, then the regulator, U2, the filter capacitors, C1 and C2, and the diode, D1, can be omitted. You must then find space for internal batteries so a self-contained keyer results. The power requirement of the TiCK is quite small. The absence of keying input allows the TiCK to go to sleep where it draws only a few microamperes of current. Four series-connected button cells should provide many hours of operation.

Again referring to Figure 2, I included switch S2 in the circuitry to increase the versatility of the keyer. A sidetone is generated by the TiCK and that sidetone can be injected into the audio chain of your receiver. But if your receiver doesn't provide ready access to its audio chain, including a loudspeaker, LS1, inside the Field Mouse will provide a keying monitor. By means of S2, a subminiature DPDT slide switch, I can have it both ways. In the schematic S2 is shown in the position that enables output to the receiver audio chain. The other switch position enables the Field Mouse's internal speaker. That speaker must be a high-imped-

ance unit. I used a 45-ohm, 0.2-watt, 1-1/2" diameter speaker. All Electronics Corporation (footnote 4) is one source for a speaker. A piezo element (not a buzzer) may be used as a speaker and they are available from RadioShack, part number RS273-073.

Of course you may decide you will never need the output to a receiver audio chain. In that case S2, R2, R3, C4 and C5 may be omitted and LS1 is connected directly to pin 3 of U1. Conversely, if you opt not to use LS1, it and switch S2 may be omitted and the top of R3 connected directly to pin 2 of U1. The values for R2 and R3 depend on the receiver to which they are connected. A good starting point is 1-megohm for R3 to limit the current. Start with about 33,000 ohms for R2 and adjust its value up or down to obtain the drive voltage required by your receiver.

A number of subminiature normally open, SPST, momentary switches can be used for S1. Various pushbutton and snap-action units are available. I chose to use a snap-action switch for its positive action. I used a separate button to actuate the switch lever and I mounted the switch on the PC board. That makes a neat wireless assembly, but requires accuracy in the location of the switch mounting holes on the PC board and also the hole in the mouse body for the switch button. Figure 3 shows the switch installation in my Field Mouse. A hole in the mouse body for mounting a plunger-type switch which would then have to be



Figure 3

wired to the PC board is another option. A third switch to consider is the kind that is typically found behind pushbuttons on electronic devices. They are generally known as Tact (or tactile) switches. (footnote 5). They are quite small and such a switch epoxied to the inside of the mouse body with its pushbutton plunger protruding through a hole would be a satisfactory solution.

The next thing to consider is the interface connector between the Field Mouse and your rig. The mouse you use will probably come with a 9-pin DIN serial plug or a 6-pin plug. I use my Field Mouse with a variety of homebrewed QRP rigs, so I retained the original connector and incorporated matching receptacles in my rigs.

In order to make my Field Mouse handy for portable operation I wanted to be able to firmly attach it to my thigh. One way to do that is to devise a leg clamp similar to that used by WW-II radio operators who used the venerable J-38 straight key. Instead, I chose to use a simple 1-inch wide cotton strap and buckle held to the bottom of the Field Mouse

by an aluminum hat-section that is epoxied to the bottom of the Mouse. Figure 4 shows that arrangement.

Use

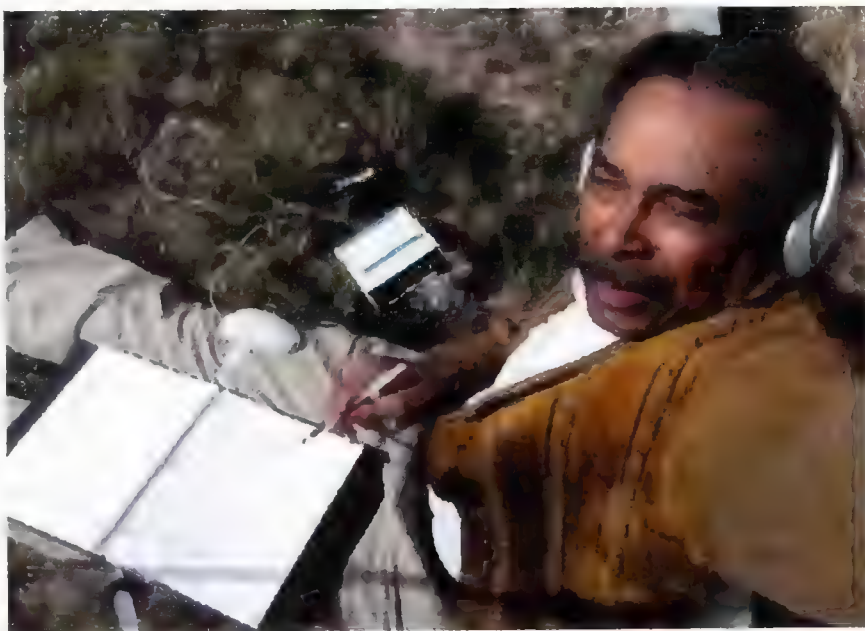
FieldMouse so that the default **dit** paddle is the left-hand mouse button. The TiCK's embedded program allows selection of your choice for the **dit** paddle. Other features such as **speed adjust**, **memory playback** and selection of **iambic mode A** or **B** (B is the default mode) are available in that program and they are described in the ARRL Handbook article and the literature provided by Kanga US.

The internal speaker for keying monitoring allows the Field Mouse to act as a code-practice device. Only a little practice is required to become proficient using this keyer.

I have described the construction of a key-and-keyer package that results in a unit which is well suited to mobile and other field use. Very few electronic components are required and they are all readily available.



Figure 4



***Bio:** I became interested in amateur radio after seeing a mobile CW station at Boy Scout camp. My father helped me build a code-practice set using a battery-powered doorbell buzzer and button. I obtained a class-B license, WOATL, at age 14,*

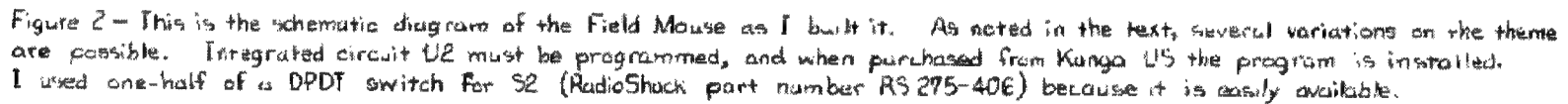
and a 2nd class commercial a Radio Telephone Operator license at 19. I now hold an Amateur Extra license. Before retirement I worked as a mechanical engineer. Bicycling is my chief secondary hobby, but I have

interests in stargazing, gardening, home maintenance and of course, ham radio homebrewing.

Contact me at 2102 W. Lupine Ave, Phoenix AZ 85029; email kn_smithedonald2102@webtv.net

Notes

1. TiCK - Tiny CMOS Keyer, is the name coined by the circuit designers, Gary M. Diana, Sr., N2JGU and Bradley S. Mitchell, WB8YGG. The TiCK keyer is described in the 2006 edition of the ARRL Handbook beginning on page 19-17.
2. TiCK kits with programmed chip may be purchased from Kanga US, 3521 Spring Lake Drive, Findly, OH 45840, telephone 419-423-4604, or web site <www.kangaus.com>.
3. A switch with a long pushbutton post is sold by All Electronics Corporation (see address below), their catalog number MPB-135.
4. All Electronics Corporation, 14928 Oxnard Street, Van Nuys, CA 91411, telephone 818-997-1806, web site <www.allelectronics.com>. Their catalog number SK-230 is a 20mm diameter, 32-ohm speaker that should work just fine.
5. Electronic circuit construction is discussed in chapter 8 of the 2006 edition of the ARRL Handbook and PC board fabrication is specifically addressed beginning on page 8.11.



News & Notes from FISTS Members

Dear Nancy,

I'm sending in my dues even though I a 88 years young. The newsletter is very much appreciated here and every word is read. I have used phone some from the Queen Mary (W6RO) FISTS # 9350, but mostly CW and 100% CW from W6LOH.

I am frustrated by my inability to read CW in my head. Have to print everything as I learned it as an Aviations Cadet in 1943. Too old to learn new tricks, hi hi.

73 Jack Orr W6LOH #7645.

Nancy and the gang,

I've enjoyed my first year in FISTS and have made many new CW friends. Keep up the good work! 73 88 Marty Leroy, KB2HHW, #14255.

Hi Nancy,

I want to thank you for that nice picture postcard of the Dayton FISTS booth. It will go into my album with personal pictures. I have had six QSOs with Jack Slocum, WB2FXK. I turned 80 years old in October. So far I have had QSOs with 469 FISTS. You and the other volunteers are doing a good job. Thanks and all my gratitude. Au revoir, Gery. KD6FXW/VE2KRM # 5338

Dear Nancy,

I have been following FISTS mailing costs and added an extra \$15 to help with the mailing costs to Canada. I enjoy receiving The Keynote so please accept the extra contribution. I hope to meet you on the air, if old King Sol ever gets back to normal. 73 George Buckle VE7EF.

Thanks George, the postage to Canada from the US is subsidized by the US contingent. There are only about 150 Canadian, so it's not too much of a burden, but does anyone have any suggestions on how to reduce the postage costs to Canada? I don't want to have two dues structures because it would just be one more thing to keep track of, plus it would be a lot more expensive for our Canadian members. The banks here are charging a \$5 fee

for depositing a Canadian check, even if it is in Canadian funds because the routing number is different.

Also, I have noticed that when some people pay with Paypal, the 74 cent fee isn't deducted from their \$15 subs. Is there a method of paying that doesn't take out the fee? Like, saying it's for a bill instead of merchandise?

And, no, we're not going online in the near future. I've "been there, done that" with WorldRadio and it can cause some major headaches, even if it's a free publication people still complain. I can just imagine the complaints we'd get if The Keynote went paperless. The main complaint is that it can't be taken into the "reading room" believe it or not! -Nancy WZ8C

Herman Munster's QSL from Mike Zbrozek, K8XF



Mike says it was a terrible Munster's episode with all sorts of ham radio mistakes. (I like it when "Thing" knocks on his box in CW!)

Get Over It!

Once in a while I receive a QSL card from the FISTS Bureau from a member whom I contacted during a contest. I am not by nature a rag chewer even in my day to day eyeball meetings. I detest long drawn out QSOs. My nature is to send and receive essential info and then shut up, hi hi.

If someone is offended that I send RST, name, QTH, 73, they will just have to get over it.

Enough of the soap box. 73, W5VDM #12127

Stealthily Back on the Air

I have been out of ham radio for 30 years and just got back in two months ago. I'm having a blast on 20 and 30 CW, bit rusty though.

I keep hearing things about FISTS on the air so thought I would give it a try.

My main rig is an Icom 725 fed into a 31' inverted "L". I have covenants, so have to operate in the stealth mode 73 Bill W5E1Y

Another Ham Helped

Dear Nancy,

Never underestimate the power of the press. I received my copy of the Keynote with my request for assistance of the KT-1 Keyer, and hoped.

Today, I received a copy of the KT-1 Keyer instructions and a copy of the random code answers from KQ2V, Bro. Simon.

Am I pleased! I have searched for this information over a year and drew blanks everywhere. So, thanks a lot of providing the vehicle for success, Norman W0RSD

Really Old Info, But Hope it's Still Helpful

Dear Nancy,

Just a note to let you know that the information regarding the hams who make repairs to rigs proved to be a good thing for me. I picked Alan Soto, KB1HSA, #9954, and sent him a note regarding his taking the rig and working on it. He called

me back and told me he was interested but to hold the rig for a few days for he had some rigs e was working on. I sent the rig via UPS on Monday, it got there by Thursday and he called me Saturday evening, telling me it was repaired and he would call back Sunday evening with the cost of the repairs.

The rig come through in good condition and is working fine. It had no RF output but the receiver worked very well. If you can, at some time, put in the Keynote that he does good work and gives good service. It was a good pick for me and as you know, it was taking a chance and it turned out very well. Many thanks for your work for FISTS and keep up the good work.

Thanks again, Dick NS2H #2508.

Everyone Knows WB2FXX

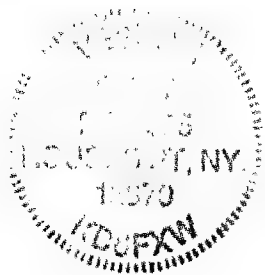


Jack must be one of our most active members, someone is always commenting to me about what a nice QSO they had with him. Thanks for being such a good FISTS ambassador, Jack!

Here's an example:

Couldn't live without The Keynote. I hear Jack up in Elmira Heights now and then, good to know another OT is still kicking up his heels! 73 88 Norm, K4YKI.

We have the K7QO Code Course and the General Upgrade Training Course. These are available by sending \$1 to FISTS, PO Box 47, Hadley MI 48440. This covers postage and envelope. They are perfect for code classes. If you want a quantity of them, please send a few extra bucks for postage, even going media mail, it add s up! And let us know your success stories, and send in photos of your code classes for The Keynote - keep up the good work promoting Morse code!



F I S T S D I P O L E S

According to K6LKC (SK) at a conference in 1992 = Feed Lines Length

Frequencies in MHz	Dipole in Feet	Choice of Feed Line in Feet
1.808	258.8	not specified
3.558	131.5	80.5 45.5
7.028	66.6	66.4 43.4
10.118	46.3	86.7 63.7
14.058	33.3	99.7 76.7
18.085	25.9	84.1
21.058	22.2	87.8
24.918	18.8	91.2
28.058	16.7	93.3

Total length of dipole plus feed-line has to be either: 110 feet

133 "

177 "

212 "

Experiences on the base of trial and error were conducted under supervision of experience Hams under different conditions.

Bear in mind the loss of coax when it is over one hundred feet.

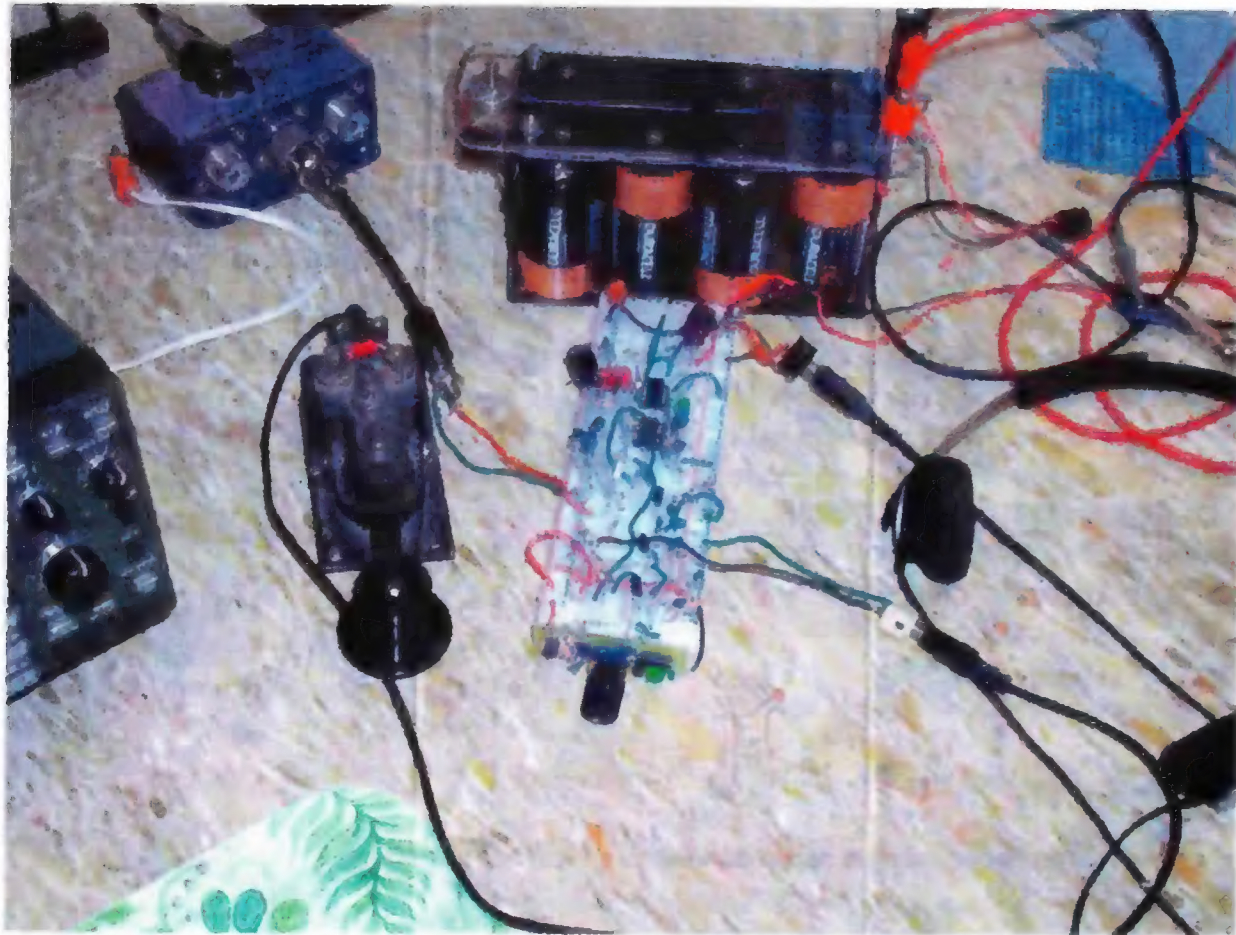
A Transmatch (antenna tuner) is required for a perfect SWR, but the transmatch will not work very hard if in other words the ohm resistance should not be very high to cope with.

A choke balun can be part of the length of the feed line without much effect on transmission results.

For FISTS CW operators, this could be very interesting specially when operation QRP or relative low power.

Different types of dipoles were also considered.

Gery VE2KRM (KD6FXW) 5338



Bob W9JQT's "Rockless"

Bob sent this in a LONG TIME ago, maybe he'll send us an update. He wrote:

I have been a ham since 1946, long before I knew of FISTS, my QSL card had "CW FOREVER", so nice to see such an active club.

Here I love CW and QRP, though other activities keep me busy at the present. I am in the final stages of a modified Rockmite with VFO that I think I will call the "Rockless." It is ready to be built on a PC board so I can get all those parts into that itty bitty Altoids tin, hi hi. See the above photo of the breadboard, now in operation. Special 73 and thank you for all your efforts. Bob Patzlaff, W9JQT, # 9570 bobpatz@comcast.net

Professor Murphy and the Boondocks

By Jerry Metz Fists #7358, N1QLL, Addison, Maine

Back in high school, we described students who had their own car as having a “four-wheel personality.” They were all popular. Unfortunately I was not one of them. I have found a way to be in demand though - put together a portable rig and go activate an island or a lighthouse! Many hams around the world get a kick out of collecting contacts from interesting places and there are plenty of organizations to support the urge. IOTA, US Islands, ILLW and the Amateur Radio Light House Society just to name a few.

I have “activated” a half-dozen lighthouses and islands and it’s a thrill to be on the receiving end of a pileup. DXpeditions can be expensive but you don’t have to fly to Pitcairn Island. There are plenty of islands and lighthouses here in the US exotic enough to attract a crowd. I activated the Little River Light, oldest one in New England, and the Whitlock’s Mill Light, the newest (1910) of the traditional lighthouses in Maine.

Being next to saltwater will give your signal a gratifying boost in these low-sunspot times. I’ve worked some great DX on forty watts from locations where you’ll want headphones to escape from the sound of crashing waves, seagulls or a foghorn.

You know Murphy’s Law: if anything can go wrong it will. Sad experiences operating portable have taught me to believe Murphy and to be prepared to

fight back. One remedy is redundancy. If it isn’t too big, too heavy or too expensive, take along an extra. I always take two keys and the connections they require. I take a memory keyer, but if that were to fail, I can use the rig’s internal keyer although the memory feature saves a lot of work. If you program it at home you’ll have more operating time when you hit the boondocks.

A car battery or a deep-cycle RV battery store a lot of power. Carrying one is a burden and I would balk at two, but I do bring along a little jump-starter battery pack for two reasons: there’s likely to be a car battery or boat battery you could use if your regular battery gets run down and if the second battery were to get weak you could avoid being stranded by using the jump-start unit to get the engine going. If necessary, you could operate QRP from the small battery.

We think of lead-acid batteries as 12 volts, but fully charged they give 13.8V and a lot of modern equipment is addicted to that and won’t work well on less. Consider taking along a “battery booster” that will take a DC source as low as 10V and put out 13.8V. If your main rig breaks down, it’s nice to have a little QRP rig to play with so you don’t get totally bummed out and have to give up the adventure. Wire antennas are relatively light weight and cheap, so take at least two of different kinds. I always

pack a Buddypole for peace of mind if the other antennas fail.

Test everything before you go. For example, I have a small relatively quiet gas-powered generator, but when I set it up in my yard at home I was surprised to find it produces RFI. I hate motor noise, so I only run it when I’m charging the battery, off the air.

Some antennas won’t work without a ground and some locations are hostile to ground rods (like Maine’s granite coast), so consider an array of quarter-wave counterpoise wires or a long wire and a tuner designed for tuning ground wires.

The TV stunt guys say, “Don’t try this at home!” Well, operating portable is not a stunt and if you don’t try your equipment at home you’re going to be battling Murphy. If you play with a groundrod at home, you’ll find it comes out a lot harder than it went in. My trick is to take a big pipe wrench along so you can get a good grip on it and apply rotation as you lift.

Copy Santa Claus: make a list and check it twice. Seals don’t sell fuses and fish don’t have any spare cable. As I prepared to activate a light house, I realized I’d left all my coax back home; fortunately home was only a few miles away, but it could have been a big disappointment. Remember, it doesn’t do any good to get mad at Murphy, and you can’t bargain with him.

The mid-August International Lighthouse Lightship Weekend coincided with the SSB part of the North American QSO Party in 2009. I planned to be at Little River Light off Cutler, Maine, a spectacular setting on the downeast coast.. That meant twelve hours when the top end of twenty meters would sound like a hog-calling contest or one of those political discussions on TV where everybody yells at once.

I rarely work SSB at home, but I had the impression most lighthouse and island fans seem to prefer the phone portions of the bands. I'm happy to say I was wrong. When the jabbering started, I retuned and ducked down to the comfort and familiarity of the bottom of the band and found a friend from Canada followed by an unbroken string of DX. Slovenia, Germany, UK, Ukraine, Russia, Wales, Italy and Denmark all flew into the log-book one right after the other like a flock of pelicans!

Lighthouses may have been more plentiful at top of the band but working portable you don't have a thousand watts or even a thousand dollar antenna so you can't break pileups and sending CQ is a joke. CW is another matter. A good filter minimizes QRM and you can sit back and have fun.

And fun is what operating portable is all about. Add a salty sea breeze and a boat ride offered by a kind lighthouse keeper - I can't think of a more perfect weekend! Well, maybe add a lobster or two....

FISTS SUPPLIES

Window Cling about 10" x 4"



Show your FISTS Pride!

Above are some examples of our FISTS merchandise. We sell these at cost. Not shown are the gold logo stickers, and the polo shirts and sweatshirts. The sweats are the same design as the tshirts. We are sold out of many shirt sizes, but here is what we have left.

Black Tshirt: Large, XL and 2XL

Blue Tshirt: Large and XL

Sweatshirts (gray): Med, Large, XL, and 2XL

Polo shirts: XL and 2XL

Tshirts cost \$6, Sweats are \$11 and Polos are \$15 including postage.

Window clings: 2 styles - I (heart) CW- 4" diameter and the key logo cling. They are 50 cents each if ordered with another item, or \$1 if clings are ordered alone.

Stickers: Gold octagon logo stickers, 200 for \$3.50

I (heart)"CW Stickers, 3/4" round stickers, \$3.50 for 200

Pins: Blue cloisonne/gold metal FISTS octagon logo pin, with tie-tack pinback = \$1.50

White cloisonne pin "I (heart) CW" 3/4" diameter tie-tack type pin = \$1.50

Iron-on embroidered cloth patch of our rectangle key logo, \$1.00.

You may use Paypal or check (made out to FISTS) to order supplies. For Paypal, send the total amount to fists@tir.com and put the items you would like in the notes box. Be sure your name & address are included.

Mail order to Supply Manager, Irene W08E 44609 N. Bunker Hill Dr., Clinton Twp, MI 48038

FISTS CW Club Membership Application

If this is a renewal or if you have had a FISTS number before, please check here.....

renew me

Call sign: _____ Name on the air: _____

Full name: _____

Mailing address: _____

Email address: _____

(Please print clearly. We do not give out or sell your email address to anyone)

Birthday: _____ Phone: _____

The newsletter is offered on audio cassette to blind members at no charge. If you require this service please check here: ☐

Favorite bands: _____

Other club affiliations (ARRL, QCWA, etc) _____

Other interests: _____

Date: _____ How did you hear about FISTS? _____

Signature: _____

Please make checks (\$15 per year, includes newsletter) payable to **FISTS CW Club** and mail to:

Nancy Kott WZ8C

PO Box 47

Hadley MI 48440 Paypal is accepted to **fists@tir.com**